

Technology and Offshore Development - Forces for Change

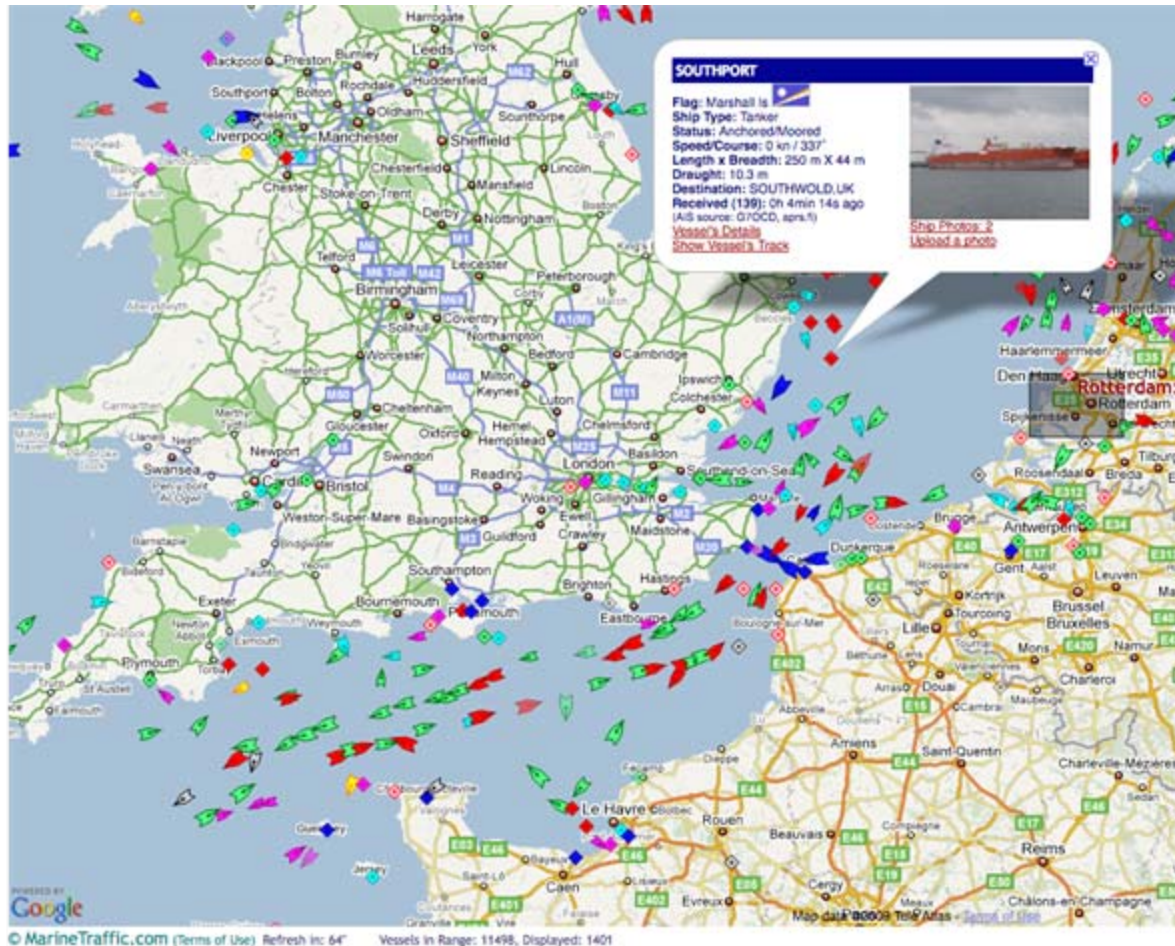
CDR Kurt Virkaitis
Secretary of Defense –
Office of Net Assessment

Technology advances and **offshore development** will significantly impact the Coast Guard over the next 30 years.

- The ocean surface will be less and less anonymous
- Much more will be known about fisheries management
- Oceans will become more crowded with fixed or anchored infrastructure

Decreasing Anonymity

Automatic ID System (AIS) Vessel Tracking




Source: <http://www.marinetraffic.com>

Partly required, partly voluntary by operators, readily available on-line 3

Anonymity:

Can zoom from basin to vessel info



[Live Map](#)[Vessels](#)[Ports](#)[Gallery](#)

[Current Condition](#)[Expected Arrivals](#)[Statistics](#)[Arrivals & Departures](#)

CMA CGM PUGET

Vessel's Details:
Ship Type: Cargo - Hazard A (Major)
Year Built: 2002
Length x Breadth: 282 m X 32 m
DeadWeight: 58548 t
Speed recorded (Max / Average): 20.6 / 17.5 knots
Flag: Bahamas [BS]
Call Sign: C6SR7
IMO: 9248124, MMSI: 311444000

Last Position Received:
Area: Atlantic North
Latitude/Longitude: [36.85684° / -76.33021° \(Map\)](#)
Currently in Port: [NORFOLK](#)
Last Known Port: [NORFOLK](#)
Info Received: 0d 0h 5min 40s ago
[Current Vessel's Track](#)
[Itineraries History](#)


Voyage Related Info (Last Received):
Draught: 12.3 m
Destination: [NORFOLK](#)
ETA: 2009-07-20 20:00
Info Received: 2009-07-21 12:53 (0d, 1h 46min 55s ago)

Recent Port Calls:

Port	Arrival (LT)	Departure (LT)
NORFOLK	2009-07-21 05:09	
NEW YORK		2009-07-20 06:46

[More...](#)

Ex Names History:
No Records Found.



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MarineTraffic.com
[Ship Photos: 1](#)
[Upload a photo](#)

Source: <http://www.marinetraffic.com>

Systems likely to become ever more complete, with smaller vessels reporting out of requirement or voluntarily

Eventually the surface will be almost completely transparent

- Data management & analysis will be vital. Systems/processes to manage this massive amount of data will be critical to success
- Smugglers will be forced to abandon the surface in favor of the more opaque subsurface environment

Self-propelled semi-submersibles already prevalent



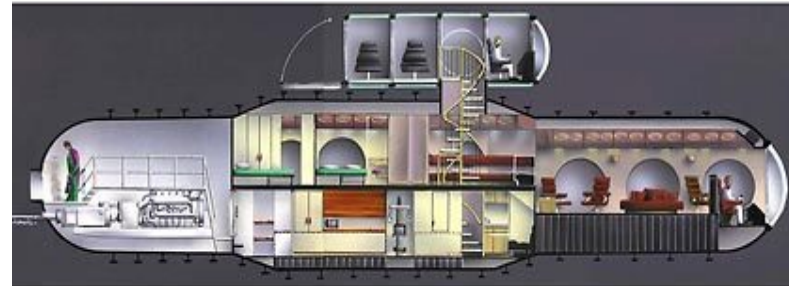
Cost ~\$2 million
to build and are
disposable

Can land ~10
tons of cocaine
worth ~\$200
million



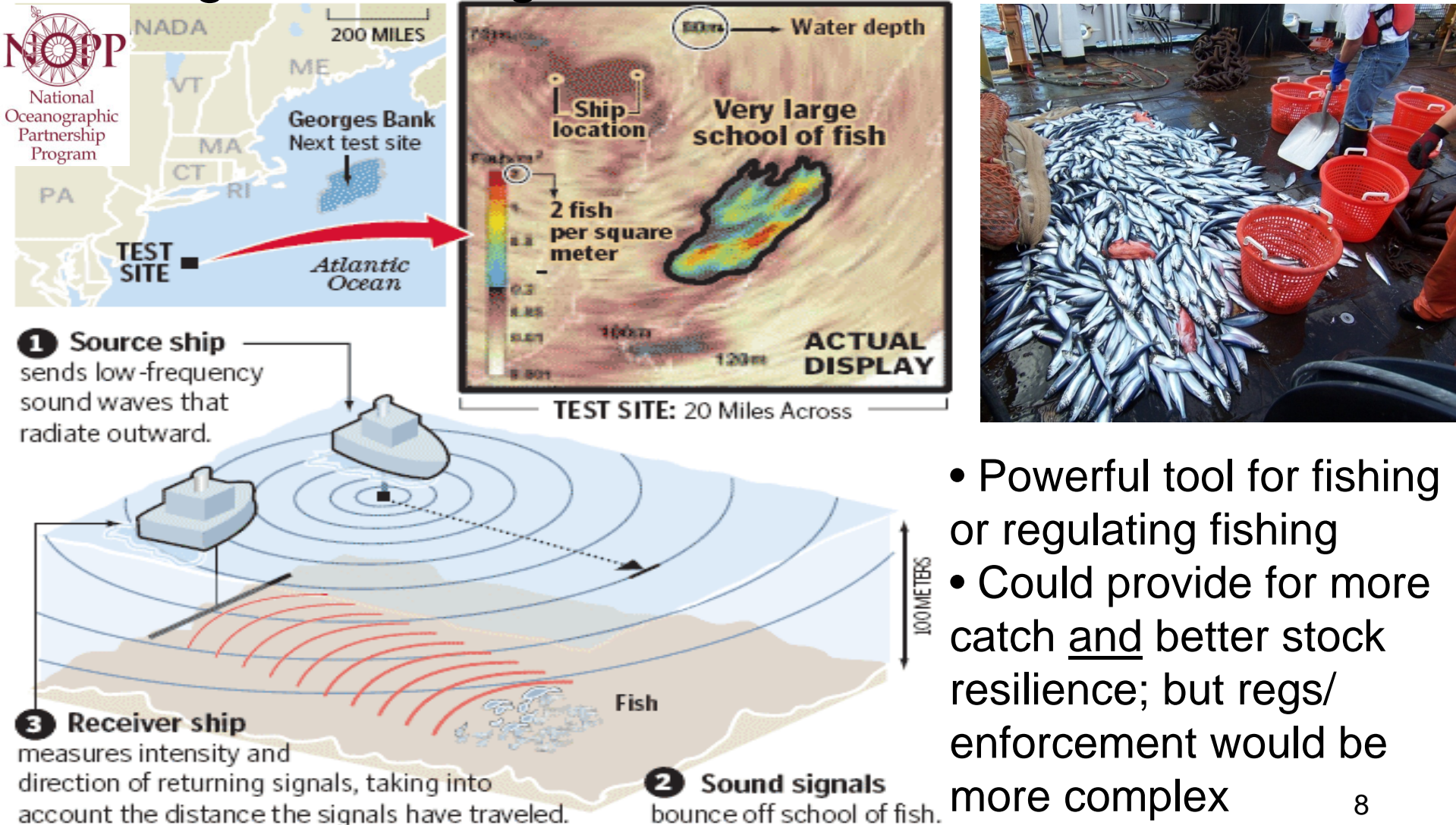
Indigenous sub manufacture is not impossible, but open market purchase is also possible

- Operating Depth ~300 meters
 - Length ~120 feet
 - Max Surface Speed 16 kts
 - Max. Submerged Speed 8 kts
 - Surface Range 3000 NM
 - Submerged 5 hours at 8 kts
 - Cost ~\$20 Million
-
- Profit is lower, but can avoid capture/detection by diving
 - Reusable
 - Bad guys get the perk of round trip luxury transport



Source: http://seattletimes.nwsources.com/html/business/technology/2003783824_luxurysubs11.html?referrer=digg

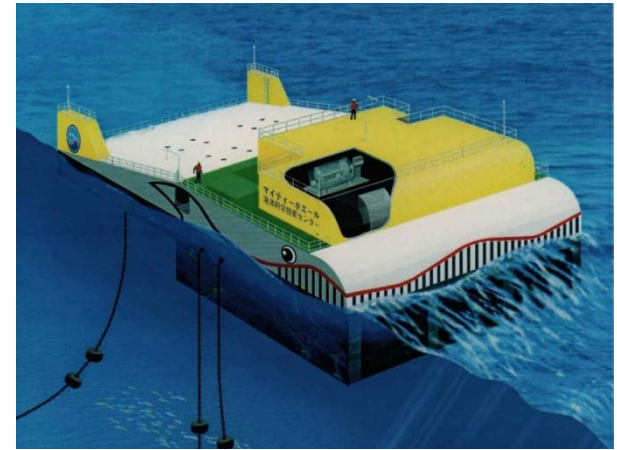
Transparency: Instantaneous, continuous wide-area detection & imaging by Ocean Acoustic Remote Sensing Acoustic lighthouses with 150 km radius



Ocean Crowding

More uses, more users

Wave energy machine (concept)



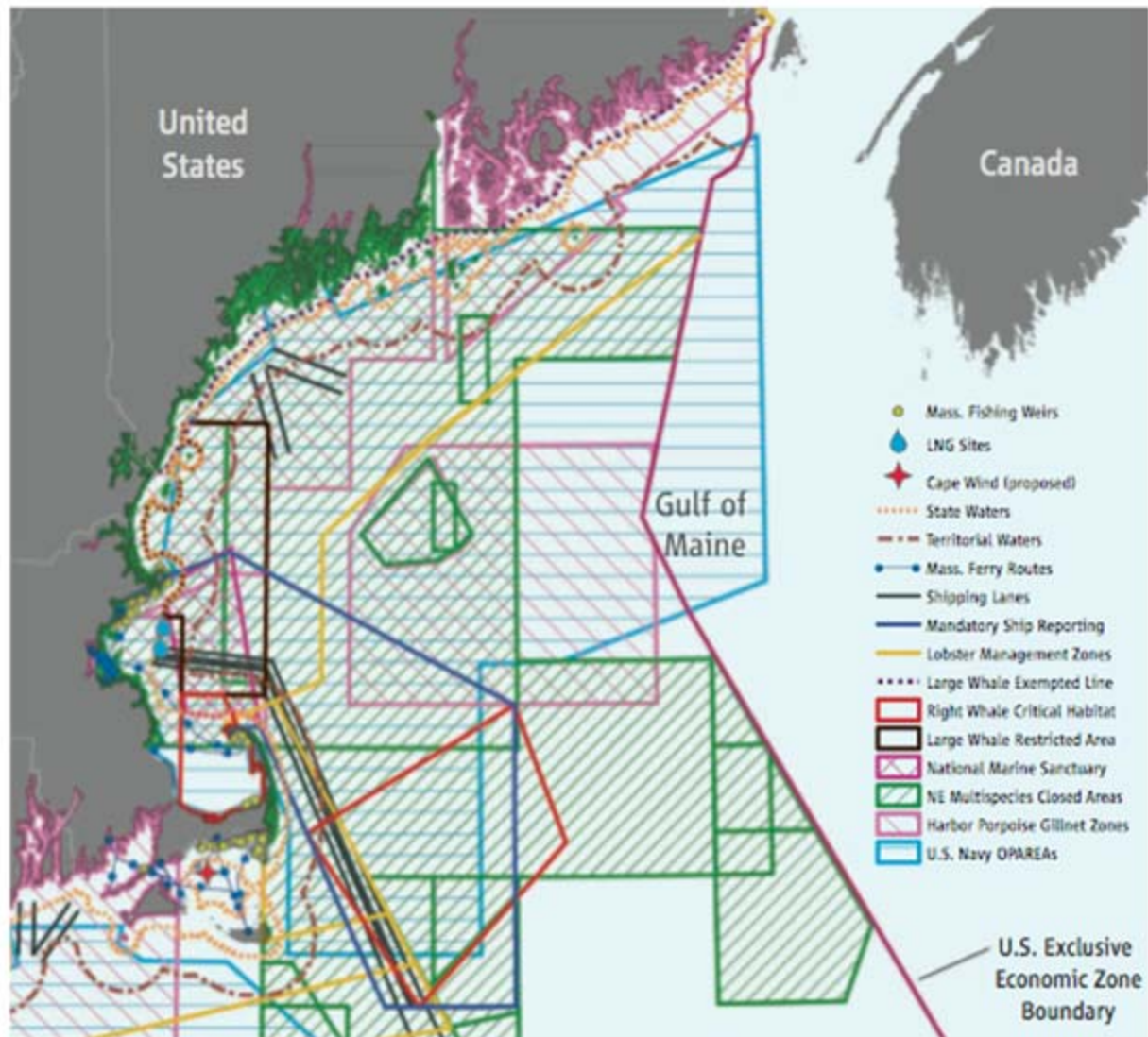
Drilling derricks

Offshore Oil & Gas: Extensive, complex networks offer vulnerability & resilience

Gulf of Mexico
pipeline
network



- As ocean real estate is developed; regulation will also increase
- This will require CG involvement and expertise
- New infrastructure will require some level of protection – Who will do it? Is it homeland security or homeland defense?



Uncoordinated sectoral ocean governance. A cacophony of activities, most regulated by separate federal agencies, crowd ocean waters in the Gulf of Maine. A federal public trust doctrine extended to all U.S. ocean waters would identify these agencies as trustees of the U.S. ocean public trust, unifying them for the first time under a common mandate to manage marine resources sustainably. LNG, liquefied natural gas; OPAREAs, Operating areas.



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